

Name: KEY

Class: _____

Date: _____

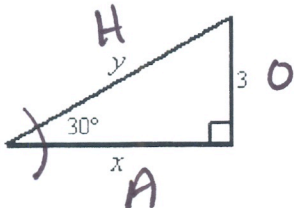
ID: A

2012-13 2nd semester content Review

SKIP 10, 11, 12, 13, 16, 18, 19, 20, 22, 23, 24, 43

SOH
CAH
TOA

1. Find the value of
- x
- and
- y
- .



$$\sin 30^\circ = \frac{3}{y}$$

$$\frac{.5}{1} = \frac{3}{y}$$

$$\frac{.5y}{.5} = \frac{3}{.5}$$

$$y = 6$$

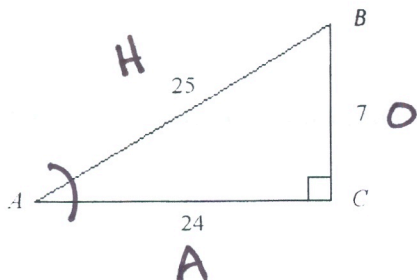
$$\tan 30^\circ = \frac{3}{x}$$

$$\frac{.5774}{1} = \frac{3}{x}$$

$$\frac{.5774x}{.5774} = \frac{3}{.5774}$$

$$x = 5.20$$

2. Find
- $\tan A$
- . Round to four decimal places, if necessary.

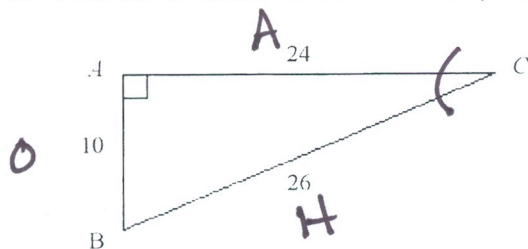


$$\tan A = \frac{7}{24}$$

$$\tan^{-1}\left(\frac{7}{24}\right) = A$$

$$A = \frac{15.64}{16.26}$$

3. Find
- $\sin C$
- . Round to four decimal places, if necessary.



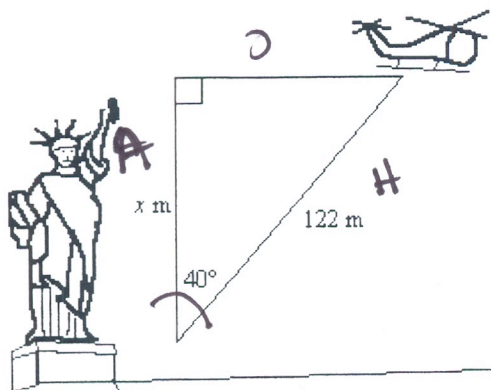
$$\sin C = \frac{10}{26}$$

$$\sin^{-1}\left(\frac{10}{26}\right) = C$$

$$C = 22.62$$

Find the measure. Round to the nearest tenth.

- 4.



$$\cos 40^\circ = \frac{A}{H}$$

$$\cos 40^\circ = \frac{x}{122}$$

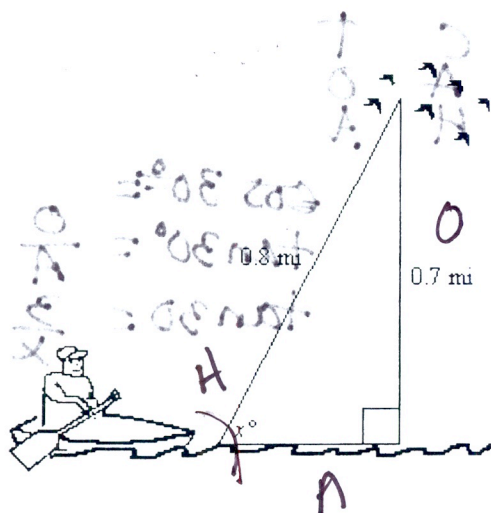
$$\frac{.7660}{1} = \frac{x}{122}$$

$$x = 93.45$$

Name: _____

ID: A

5.



$$\tan X = \frac{.7}{.8}$$

$$X = 41.9$$

$$\sin X = \left(\frac{.7}{.8} \right)$$

$$\sin^{-1}\left(\frac{.7}{.8}\right) = X$$

$$X = 61.04$$

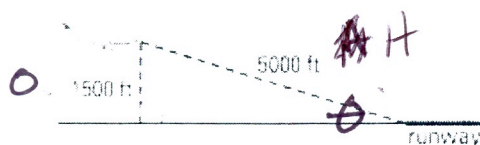
Find the measure of an acute angle that satisfies the given equation. Round your answers to the nearest tenth of a degree.

6. $\tan Y = \frac{40}{9} = 77.3^\circ$

7. $\sin X = \frac{6}{11} = 33.1^\circ$

8. $\cos Z = \frac{5}{13} = 67.4^\circ$

9. An airplane is flying at an elevation of 1500 feet. What is the airplane's angle of elevation from the runway when it is 5000 feet from the runway? Explain.



$$\tan \theta = \frac{1500}{5000}$$

$$\theta = 16.7^\circ$$

$$\sin \theta = \left(\frac{1500}{5000} \right)$$

$$\theta = 17.45^\circ$$

10. Find the area of a rectangle that measures 10 yd by 29 yd.

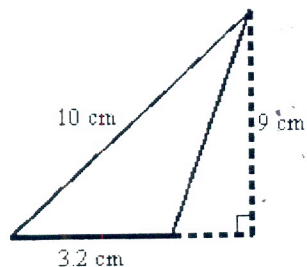
~~$$A = \frac{1}{2}bh = \frac{1}{2}(10)(29) = 145 \text{ yd}^2$$~~

$$A = L \times W = 10(29) = 290 \text{ yd}^2$$

Name: _____

ID: A

11. Find the area (not drawn to scale):



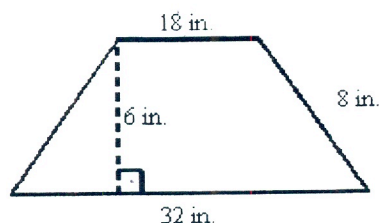
$$A = \frac{1}{2}bh$$

$$= \frac{1}{2}(3.2)(9)$$

$$= 14.4 \text{ cm}^2$$

Find the area:

12.



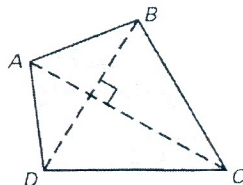
$$A = \frac{1}{2}h(b_1 + b_2)$$

$$A = \frac{1}{2}(6)(18 + 32)$$

$$A = 150 \text{ in.}^2$$

13. Given: $\overline{AC} \perp \overline{BD}$

If $AC = 18$ and $BD = 15$, find the area of kite $ABCD$.

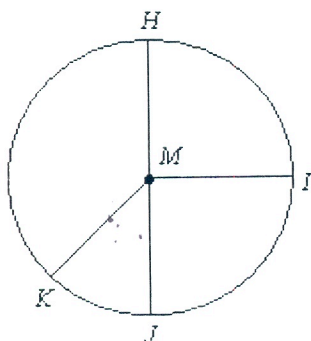


$$A = \frac{1}{2}d_1d_2$$

$$A = \frac{1}{2}(15)(18)$$

$$A = 135 \text{ square units}$$

Classify the given arc in circle M as a minor arc, major arc, or semicircle.



14. arc IJ

15. arc HIJ

14. \overline{IJ} minor

15. \widehat{HIJ} semi

16. \widehat{HKI} major

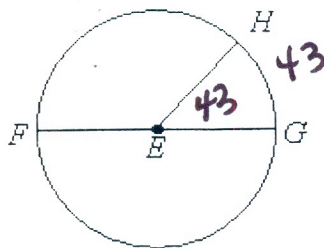
Name: _____

ID: A

16. arc HKI

major

17. In circle E , \overline{FG} is a diameter and $m \text{ arc}(GH) = 43$. Find $m \text{ arc}(HFG)$.



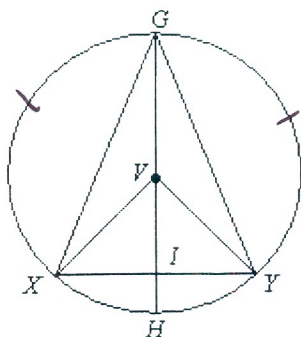
$$180 - 43 = 137^\circ$$

$$+ 180$$

$$317$$

OR

$$\begin{array}{r} 360 \\ - 43 \\ \hline 317 \end{array}$$

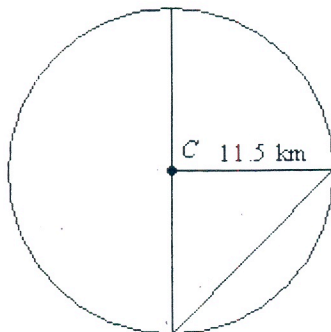


18. If $\text{arc } GX \cong \text{arc } GY$, then $\overline{GX} \cong$? \overline{GY}

19. If $\overline{GH} \perp \overline{XY}$, then $\overline{XI} \cong$? \overline{IY}

Find the circumference of the circle to the nearest hundredth. Use 3.14 for π .

20.



$$C = 2\pi r$$

$$C = 2(\pi)(11.5)$$

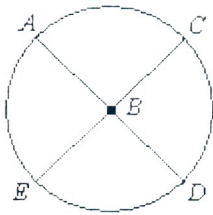
$$C = 72.26 \text{ km}$$

Name: _____

ID: A

Determine whether the angle is an inscribed angle. Name the intercepted arc for the angle.

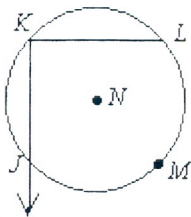
21. $\angle ABC$



no central \widehat{AC}

- a. yes; arc AC b. no; arc CD c. yes; arc CD d. no; arc AC

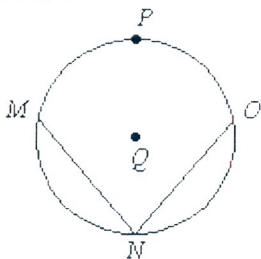
22. $\angle JKL$



yes \widehat{LMJ}

- a. yes; arc LMJ b. no; arc LMJ c. yes; arc LM d. no; arc LM

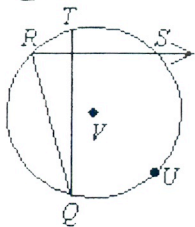
23. $\angle MNO$



yes \widehat{MPO} or \widehat{MO}

- a. yes; arc PO b. no; arc MO c. yes; arc MO d. no; arc PO

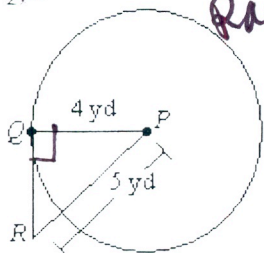
24. $\angle QRS$



yes \widehat{QS}

- a. no; arc SQ b. yes; arc QU c. yes; arc QS d. no; arc SU

Find the measure. If necessary, round to the nearest tenth. Assume segments that appear to be tangent are tangent.

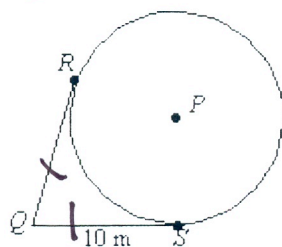
31. QR 

Radius & tangent are \perp

$$5^2 = 4^2 + QR^2$$

3-4-5

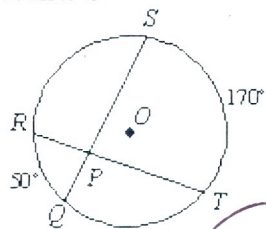
$$QR = 3$$

32. $m\widehat{QR}$ 

$$\cancel{m\widehat{RQ}} = 210$$

$$m\widehat{RQ} = 10$$

Find each measure.

33. $m\angle RPS$ 

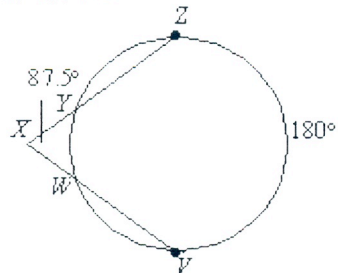
a. 140 b. 60 c. 70 d. 120

$$m\angle RPS = \frac{1}{2}(50 + 170)$$

$$= \frac{1}{2}(220)$$

$$= 110^\circ$$

$$m\angle RPS = 180 - 110 = 70^\circ$$

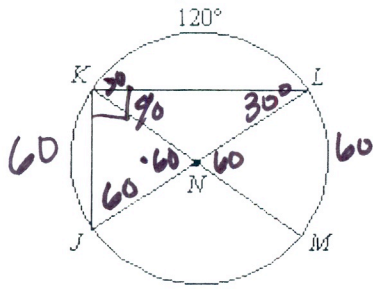
34. $m \text{ arc } WY$ 

$$2 \cdot 87.5 = \frac{1}{2}(180 - \widehat{WY}) \cdot 2$$

$$175 = 180 - \widehat{WY}$$

$$\widehat{WY} = 5^\circ$$

For circle N, find the measure of the following.



$$180 - 60 = 120$$

25. $m\angle KJL$
a. 30 b. 60 c. 120 d. 240

26. $m\angle KJL$
a. 30 b. 15 c. 60 d. 90

27. $m\angle JKL$
a. 60 b. 120 c. 30 d. 90

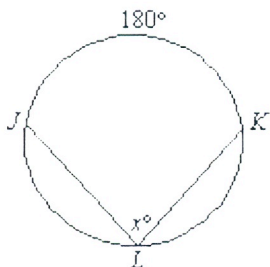
28. $m\angle MKL$
a. 90 b. 30 c. 120 d. 60

29. $m\angle EGF$

$$\frac{1}{2}(180) = 90^\circ$$

In the circle, find the value of x.

30.



$$x = \frac{1}{2}(180)$$

$$x = 90^\circ$$

$$180 - 60^\circ = 120^\circ$$

$$m\angle KJL = \frac{1}{2} \widehat{KL} = \frac{1}{2} 120 = 60^\circ$$

$$m\angle JKL = \frac{1}{2} \widehat{JM} = \frac{1}{2} 60 = 30$$

$$180 - 60 - 30 = 90^\circ$$

$$m\angle MKL = \frac{1}{2} \widehat{ML}$$

$$= \frac{1}{2} 120 = 60^\circ$$

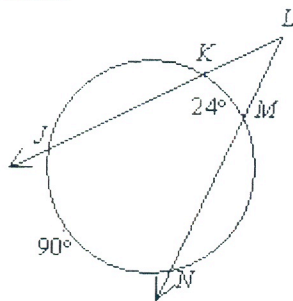
$$m\angle MKL = \frac{1}{2}(120)$$

$$m\angle MKL = 60^\circ$$

Name: _____

ID: A

35. $m\angle L$



$$x = \frac{1}{2}(m-n)$$

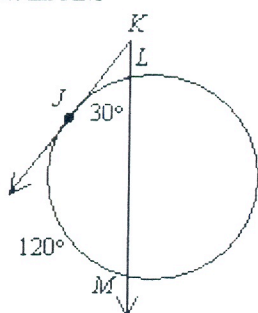
$$m\angle L = \frac{1}{2}(90-24)$$

$$= \frac{1}{2}(66)$$

$$= 33^\circ$$

Find the measure of the angle. Assume segments that appear to be tangent are tangent.

36. $m\angle JKM$



a. 45 b. 150 c. 90 d. 75

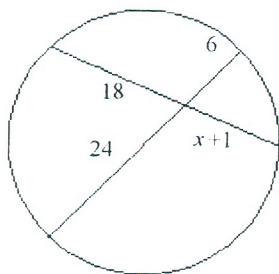
$$x = \frac{1}{2}(m-n)$$

$$m\angle JKM = \frac{1}{2}(120-30)$$

$$= \frac{1}{2}(90)$$

$$= 45^\circ$$

37. Solve for x .



$$a \cdot b = c \cdot d$$

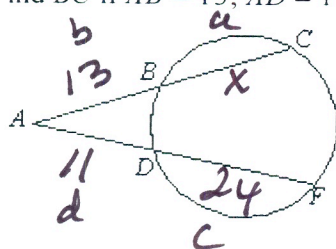
$$18(x+1) = 6(24)$$

$$18x + 18 = 144$$

$$\frac{18x}{18} = \frac{126}{18}$$

$$x = 7$$

38. Find BC if $AB = 13$, $AD = 11$, and $DF = 24$. Round the answer to the nearest tenth.



$$b(a+b) = d(c+d)$$

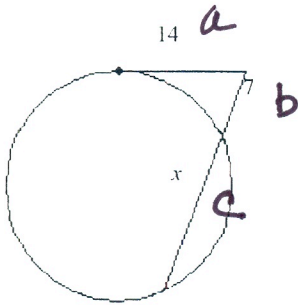
$$13(13+x) = 11(11+24)$$

$$169 + 13x = 385$$

$$\frac{13x}{13} = \frac{216}{13}$$

$$x = 16.9$$

39. Solve for x . Round the answer to the nearest hundredth, if necessary.



$$a^2 = b(b+c)$$

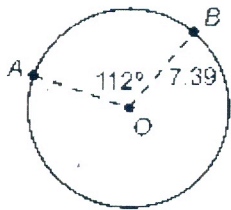
$$14^2 = 7(7+x)$$

$$\begin{array}{r} 196 = 49 + 7x \\ -49 \quad -49 \end{array}$$

$$147 = 7x$$

$$x = 21$$

40. Circle O has a radius of 7.39. If $m\angle AOB$ is 112° , then find the length of \widehat{AB} to one decimal place.



$$\widehat{AB} = \frac{112}{360} (2\pi (7.39))$$

$$\widehat{AB} = 14.4$$

Find the area of the shaded sector to the nearest whole number.

41.



$$\text{area} = \frac{60}{360} (\pi 12^2)$$

$$= 75.4 \text{ units squared}$$

42.



$$\text{area} = \frac{45}{360} (\pi (13)^2)$$

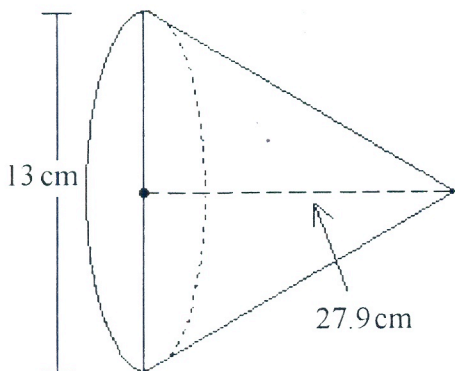
$$= 64.37 \text{ units squared}$$

Name: _____

ID: A

Find the volume of the cone. Use 3.14 for π and round the answer to the nearest hundredth, if necessary.

46.



$$r = \frac{13}{2} = 6.5$$

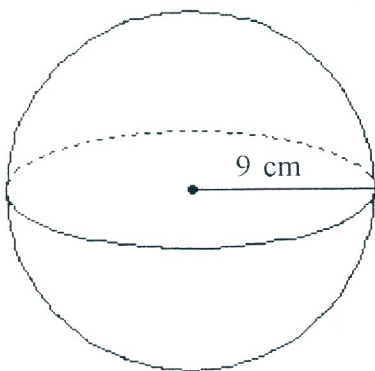
$$V = \frac{1}{3} \pi r^2 h$$

$$V = \frac{1}{3} \pi (6.5)^2 (27.9)$$

$$V = 1234.41 \text{ cm}^3$$

Find the surface area and volume of the sphere. Round to the nearest hundredth.

47.



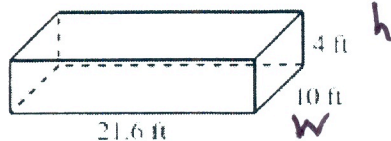
$$V = \frac{4}{3} \pi r^3$$

$$= \frac{4}{3} \pi (9)^3$$

$$= 3053.62 \text{ cm}^3$$

Draw a net. Then find the surface area. Round to the nearest tenth.

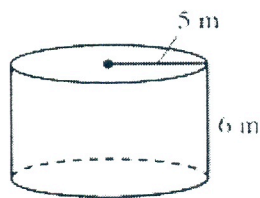
48.



$$\begin{aligned} SA &= 2LW + 2Lh + 2wh \\ &= 2(21.6)(10) + 2(21.6)(4) + 2(10)(4) \\ &= 684.8 \text{ ft}^2 \end{aligned}$$

Draw a net. Then find the surface area. Round to the nearest tenth.

49.



$$\begin{aligned} r &= 5 \\ h &= 6 \end{aligned}$$

$$SA = 2\pi r^2 + 2\pi rh$$

$$= 2\pi (5)^2 + 2\pi (5)(6)$$

$$= 50\pi + 12\pi$$

$$= 62\pi$$

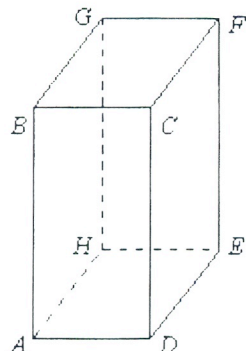
$$= 194.78 \text{ m}^2$$

Name: _____

ID: A

Name the faces, edges, and vertices of the polyhedron.

43.

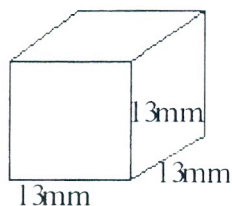


Faces BCFG ADEH
 ABCD EFGH
 ABGH FCED

$\frac{A}{B}$
 $\frac{E}{B}$

Find the volume of the solid. Round to the nearest hundredth, if necessary.

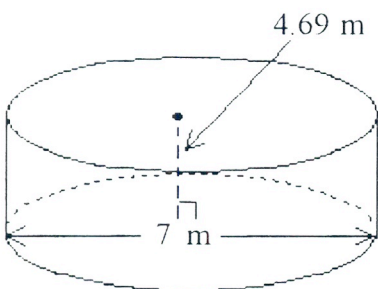
44.



$$\begin{aligned} V &= L \times W \times H \\ &= 13 \times 13 \times 13 \\ &= 2197 \text{ mm}^3 \end{aligned}$$

Find the volume of the cylinder. Use 3.14 for π and round to the nearest hundredth, if necessary.

45.



$$r = \frac{7}{2} = 3.5$$

$$\begin{aligned} V &= \pi r^2 h \\ V &= \pi (3.5)^2 (4.69) \\ V &= \cancel{180.5} \\ &= 180.49 \text{ m}^3 \end{aligned}$$